



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,619	12/20/2001	Toshio Suzuki	2001_1875A	1217

513 7590 08/25/2003

WENDEROTH, LIND & PONACK, L.L.P.  
2033 K STREET N. W.  
SUITE 800  
WASHINGTON, DC 20006-1021

EXAMINER

SAUCIER, SANDRA E

ART UNIT	PAPER NUMBER
----------	--------------

1651

DATE MAILED: 08/25/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/022,619

Applicant(s)

SUZUKI ET AL.

Examiner

Sandra Saucier

Art Unit

1651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1651

#### DETAILED ACTION

Claims 1-6 are pending and are considered on the merits.

#### Double Patenting

The terminal disclaimer filed on 6/13/2003 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 09/892743 has been reviewed and is accepted. The terminal disclaimer has been recorded.

#### Claim Rejections – 35 USC § 112

Claims 1-4 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 states that "a single carbon source" which is racemic 1,2-propanediol is in the culture medium. Is this the same as a "sole carbon source" meaning that no other source of carbon is included in the medium?

#### Claim Rejections - 35 USC § 102

Claim 5 remains rejected under 35 U.S.C. 102(b) as being anticipated by US 5,246,843 [IDS] or JP 6-209781 [IDS] or JP 6-030790 [IDS].

Claim 5 is directed to a specific strain of *Pseudomonas nitroreducens*.

US 5,246,843 discloses *Pseudomonas* FERM P-11109, 11108, 11110 which is capable of producing R-3-halo-1,2-propanediol from the raceme. Although the species of the disclosed *Pseudomonas* is not revealed by the patent, it is a reasonable assumption that they may be the same strain as presently claimed because they belong to the same genus and perform an analogous enantioselective assimilation.

JP 6-209781 [IDS] or JP 6-030790 [IDS] disclose microbes from *Pseudomonas* which are capable of assimilating the S form of 1,2-propanediol and leaving the R form.

The Patent and Trademark Office is not equipped to conduct experimentation in order to determine whether or not applicants' strain differs and, if so, to what extent from the strains discussed in the references. Accordingly, it has been established that the prior art strains, which have the same genus classification and share the property of being

Art Unit: 1651

able to produce (R)-1,2-propanediol from the raceme, demonstrate a reasonable probability that it is either identical or sufficiently similar that whatever differences exist are not patentably significant. Therefore, the burden of establishing novelty or unobviousness by objective evidence is shifted to applicants.

Merely because a characteristic of a known strain is not disclosed in a reference does not make the known strain patentable. The known strain possesses inherent characteristics which might not be displayed in the tests used the reference. However, the microbe disclosed may be the same microbe as claimed. Clear evidence that the strains of the cited prior art do not possess a critical characteristic that is possessed by the claimed strain, would advance prosecution and might permit allowance of claims to applicants' strain.

#### Response to Arguments

Applicant's arguments filed 6/13/03 have been fully considered but they are not persuasive because applicant argues that the microbe of claim 5 assimilates the R form and leaves the S form, and that this is distinct from the microbes of the applied art. This appears to be an erroneous argument as all of the microbes mentioned in the specification such as the microbe of claim 5, *Pseudomonas nitroreducens* DS-S-RP8 (FERM BP-7793) are taught by the specification on page 1, lines 10-15, to assimilate the S-form and leave the R-form of 1,2-propanediol. Please also see claim 3.

Applicant also argues that the instant microbe has different bacterial properties from the microbes of the cited art, but no such properties have been pointed to or argued.

#### Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action: (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1651

Claims 1-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 6-209781 [IDS] or JP 6-030790 [IDS].

The claims are directed to a method of producing (R)-1,2-propanediol comprising:

culturing microbes from the genus *Pseudomonas* or *Alcaligenes* in a medium with racemic 1,2-propanediol as "a" single carbon source, where the microbe assimilates the S enantiomer from the racemic mixture, and

isolating the (R) 1,2-propanediol.

The references are relied upon as explained below.

JP 6-209781 discloses a method of using *Pseudomonas* TRB2, TRB4, TRB13 to enantioselectively produce R-1,2-propanediol from the raceme. See abstract where R=H and m=1. On page 3, it is stated that any medium may be used to cultivate the microbes and that 1,2-propanediol may be used as a carbon source. Inorganic nitrogen sources, inorganic salts and vitamins may be incorporated. This is considered to be a generic teaching or suggestion of the use of 1,2-propanediol as the carbon source in a synthetic medium comprising salts, inorganic nitrogen source and vitamins.

JP 6-030790 disclose a method of using *Pseudomonas* TRB2, TRB4, TRB13 to enantioselectively assimilate the (S)-1,2-propanediol enantiomer from its raceme. On page 3, it appears to have substantially the same teaching as JP 6-209781 regarding the cultivation medium.

The use of 1,2-propanediol as a single carbon source in a cultivation medium would have been obvious because the specifications of both cited patents suggest the addition of 1,2-propanediol as a carbon source to a medium comprising inorganic nitrogen, salts and vitamins.

Since the reference does not describe the species of *Pseudomonas* used in the process, but rather refers to them as TRB2, etc., it is unclear what strain these microbes may be and it is reasonable assumption that they may be the same strain as presently in the claims.

#### Response to Arguments

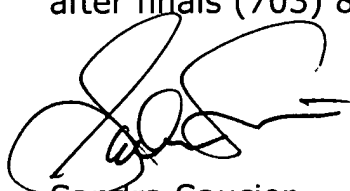
Applicants' arguments have been fully considered, but are not persuasive. Applicants argue that the instant microbes do not need to be precultured and that the cited references teach first cultivating on a large

Art Unit: 1651

scale basis. While this may be true, the teachings of the cited art are not limited to preculturing prior to exposure to the substrate, but suggest that the substrate, 1,2-propanediol may be used as the carbon source in the medium used for cultivating as well as for the reaction. This appears to be the same medium and could be interpreted to be the same method as the method in the instant claims. While the examples of the cited art do not demonstrate a one step cultivation of the microbes, please note that the instant claims are not limited to a one step method of cultivation, but rather use open language in the method. Applicants further argue that a nitrogen source is essential in the present method; however, no nitrogen source is mentioned in the claimed method. It is suggested that applicants clearly distinguish their microbes from the microbes used in the prior art processes, so that prosecution might be advanced.

To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1651. The supervisor for 1651 is M. Wityshyn, (703) 308-4743. The normal work schedule for Examiner Saucier is 8:30AM to 5:00 PM Monday and Tuesday and 8:30 AM to noon on Wednesday.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra Saucier whose telephone number is (703) 308-1084. Status inquiries must be directed to the Customer Service Desk at (703) 308-0197 or (703)-308-0198. The number of the Fax Center for the faxing of official papers is (703) 872-9306 or for after finals (703) 872-9307.



Sandra Saucier  
Primary Examiner  
Art Unit 1651  
August 18, 2003